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10/530,307	04/04/2005	Janardhana Bhat	SG 020026	9932
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EXAMINER				
LEE, SIU M				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/530,307

Applicant(s)

BHAT ET AL.

Examiner

SIU M. LEE

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 6, 8-14 and 17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 8, 13, 14 and 17 is/are rejected.
- 7) ☒ Claim(s) 6 and 9-12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 February 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of species I in the reply filed on 7/25/2008 is acknowledged.

Response to Arguments

2. Applicant's arguments with respect to claims 1-3, 6, 8-13, and 17 have been considered but are moot in view of the new ground(s) of rejection because of the amendment.

Claim Objections

3. Claims 1-3, 6, and 8-13 are objected to because of the following informalities:

According to CFR §1.75 (i), it requires "where a claim sets forth a plurality of elements or steps, each step of the claim should be separated by a line indentation".

The independent claims 1 and 6 contain a plurality of steps in a single paragraph without the separation. See MPEP CFR §1.75 (i).

Claim 6, line 9, the examiner suggests changing "switched _to" to "switched to".

Claim 9, line 10, "(LNA=OFF)" should be corrected to "(LNA=ON)".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 13, and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamamoto (US 6,831,705 B2).

(1) Regarding claim 1:

Yamamoto discloses a method for automatically setting an operative state of a wideband amplifier (high gain RF amplifier 31 in figure 1) in a multi-channel television receiver, the method comprising the step of:

measuring at least one signal quality parameter (the detector 18 in figure 1 detected the IF signal level); and

deciding to switch the amplifier either to its ON state (active state) or to its OFF state (inactive state) on the basis of the measured parameter (microcomputer 22 determines whether or not the RF signal detected by the detector 18 is at a predetermined level or greater, if the signal is at the predetermined level or greater, the microcomputer 22 stores the channel frequency of the television radio wave tuned by the tuning operation, when the RF signal detected by the detector 18 is not at the predetermined level or greater, the microcomputer turns on the booster 31 by switching the contact point 28 to the input terminal of the high gain RF amplifier 31 using the

switch 29, and turn on the flag indicating the operation state of the switch circuit 29, column 6, line 67 - column 7, line 13), wherein the step of deciding to switch the amplifier to its ON state (active state) is exclusively taken during at least one time interval when the receiver is switched to a channel, or during activation of the multi-channel television receiver, or during an installation process when all channels are scanned (the above process happen during the automatic channel preset mode, column 6, line 52).

(2) Regarding claim 13:

Yamamoto further discloses wherein the step of measuring at least one signal quality parameter comprises:

the step of measuring signal conditions of all available channels and the steps of measuring; and deciding to switch are taken exclusively during an initializing procedure of the receiver (the examiner interprets the automatic channel preset mode as an initializing procedure of the receiver, column 6, lines 52-53) (figure 4, during automatic channel preset, each channel is tune by turn off the booster (S26) and measure the RF signal is at predetermined level (S34), if the RF signal is at the predetermined level or greater, the microcomputer 22 stores the channel frequency of the television radio wave tuned by the tuning operation and the state of the flag; if the RF signal is not at the predetermined level, the microcomputer 22 tune on the booster 31 by and tune the channel, column 6, line 52 – column 7, line 13).

(3) Regarding claim 17:

Yamamoto discloses a multi-channel television receiver comprising:

an input for receiving a wideband signal potentially comprising multiple channels (the antenna 11 of the television receiver as shown in figure 1, since it is a television receiver, therefore, it is inherently receiving a wideband signal potentially comprising multiple channel, column 5, lines 24-26);

a tuner stage (tuner RF amplifier 12) (in review of the instant application, the instant application only discloses that the tuner comprises the wideband RF amplifier 115, therefore, the examiner interprets the RF amplifier 12 of Yamamoto as the tuner stage);

a wideband amplifier connected between said input and said tuner (high gain amplifier 31 is connected between said input (antenna 11) and said tuner (RF amplifier 12) as shown in figure 1);

a controllable switch bridging said amplifier (switch circuit 28 is controllable to connect the antenna input to the high gain amplifier 31 or bypass the high gain amplifier 31 and directly connect the antenna input to the RF amplifier 12 as shown in figure 1, column 5, line 63 – column 6, line 11);

a switch controller (microcomputer 22) designed to generate a switch control signal (BSC) (the switch circuit 29 controls the switch circuit 28 depending on the control from the microcomputer 22, column 5, lines 29-32);

wherein the switch controller (microcomputer 22) is designed to measure at least one signal quality parameter (the microcomputer 22 determines whether or not the RF signal detected by the detector 18 is at a predetermined level or greater, column 6, line 66 – column 7, line 1) and to generate its switch control signal (BSC) on the basis of the

measured parameter (if the RF signal is at the predetermined level or greater, the microcomputer 22 stores the channel frequency of the television and if the RF signal detected by the detector 18 is not at the predetermined level or greater, the microcomputer 22 turns on the booster 31 by switching the contact point 28 to the input of the high gain RF amplifier 31 using the switch 29, column 7, lines 1-4 and 9-14); and wherein the switch controller is designed to switch the switch from its closed state (amplifier inactive) (bypassing high gain amplifier 31) to its open state (amplifier active) (connecting the high gain amplifier 31 to contact point 28) exclusively during at least one time interval when a channel is selected (column 6, line 52 - column 7, line 14 describes the automatic channel preset mode when a channel is selected).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto (US 6,831,705 B2) in view of Hutchison IV et al. (US 5,722,061).

(1) Regarding claim 2:

Yamamoto discloses all the subject matter as discussed in claim 1 except the method comprises the steps of (a) remeasuring said signal quality parameter; (b)

deciding, on the basis of the remeasured parameter, to either maintain the amplifier I its ON state or to switch the amplifier to its OFF state.

However, Hutchison IV et al. discloses a method comprising the steps of (a) remeasuring said signal quality parameter (step 1702 turn on the LNA amplifier and then measure the power of the received signal, column 9, line 65 – column 10, lines 2); (b) deciding, on the basis of the remeasured parameter, to either maintain the amplifier in its ON state or to switch the amplifier to its OFF state (decision step 1704 in figure 17, it is determined whether the receive power is greater than a disable threshold, if the receive power is not greater than the disable threshold, then the process return to block 1702, column 10, lines 1-5).

It is desirable to remeasuring said signal quality parameter and deciding, on the basis of the remeasured parameter, to either maintain the amplifier I its ON state or to switch the amplifier to its OFF state because by constantly monitoring the parameter, it compensates for the changing channel. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to employ the teaching of Hutchison IV et al. in the method of Yamamoto to prevent the received signal being distorted.

(2) Regarding claim 8:

Yamamoto discloses all the subject matter as discussed in claim 1 except the method comprises the steps of (a) switching the amplifier to its off state; (b) measuring a value SIP if said at least one signal quality parameter while the amplifier id maintained in its OFF state; (c) comparing the measured value with a predetermined decision level;

(d) if the comparison indicates good signal conditions, deciding to keep the amplifier operating in its OFF state.

However, Hutchison IV et al. discloses (a) switching the amplifier to its off state (step 1706 in figure 17, disable LNA, column 10, lines 9-15); (b) measuring a value SIP if said at least one signal quality parameter while the amplifier is maintained in its OFF state (measure the receive power when the LNA is being turn off, column 10, lines 17-18); (c) comparing the measured value with a predetermined decision level (step 1708 in figure 17, is receive power < enable threshold, column 10, lines 18-19); (d) if the comparison indicates good signal conditions, deciding to keep the amplifier operating in its OFF state (step 1710 test if the significant intermod components present, column 10, lines 24-26).

It is desirable to switching the amplifier to its off state; measuring a value SIP if said at least one signal quality parameter while the amplifier id maintained in its OFF state; comparing the measured value with a predetermined decision level; if the comparison indicates good signal conditions, deciding to keep the amplifier operating in its OFF state because it prevent more intermodulation distortion will be created by turning on the LNA. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to employ the teaching of Hutchison IV et al. in the method of Kenney et al. to reduce the distortion created by the LNA.

8. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto (US 6,831,705 B2) in view of Albicker (US 7,274,918 B1).

Yamamoto discloses all the subject matter as discussed in claim 1 except wherein the step of measuring at least one signal quality parameter comprises the step of measuring intermodulation product or a noise-related signal or determining whether an automatic gain control system of the receiver is active or inactive.

However, Albicker discloses wherein the step of measuring at least one signal quality parameter comprises the step of measuring intermodulation products (the examiner interpret intermodulation product as the interference from a neighbor channel) (the tuner measures the signal strength at a certain channel frequency, and an adjacent frequencies to the certain channel frequency, if there is signal energy indicative of noise at the adjacent frequencies, a noise value is subtracted from the measured signal strength of the first desired frequency to provide a corrected measured signal strength value, which is compared against a threshold to determine if valid audio data is present at the first desired frequency, column 1, lines 40-50).

It is desirable to measuring at least one signal quality parameter comprises the step of measuring intermodulation product because it considers the strength of the interference and noise as part of the quality of signal. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to employ the teaching of Albicker in the method of Yamamoto to improve the estimation of quality of the channel.

9. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto (US 6,831,705 B2) in view of Schreiber et al. (US 5,010,405).

Yamamoto discloses all subject matter as discussed in claim 13 and further disclose wherein the at least one signal quality parameter comprises a signal strength of each of the available channels (step S34 in figure 4, column 6, line 52 – column 7, line 13); except wherein the at least one signal quality parameter comprises a signal-to-noise ratio of each of the available channels.

However, Schreiber et al. teaches a method to measure the signal to noise ratio as a part of the signal quality (column 10, lines 51-58).

It is desirable to include the signal to noise ratio of each channel as a part of the signal quality parameter because it considers the strength of the interference and noise as part of the quality of signal. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to employ the teaching of Schreiber et al. in the method of Yamamoto to improve the estimation of quality of the channel.

Allowable Subject Matter

10. Claims 9-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 6 is objected being failed to comply with CFR §1.75 (i).

11. The following is a statement of reasons for the indication of allowable subject matter:

Claim 6 describes a method for automatically setting an operative state of a wideband amplifier in a multi-channel receiver, the method comprising the steps of measuring at least one signal quality parameter; and deciding to switch the amplifier either to its ON state (active state) or to its OFF state (inactive state) on the basis of the measured parameter, wherein the step of deciding to switch the amplifier to its ON state (active state) is taken during at least one time interval when the receiver is switched to a channel wherein measuring that at least one signal quality parameter includes determining whether a DC voltage level of an automatic gain control signal (AGC2) has a first value indicating that the automatic gain control system is inactive, or has a value within a predetermined range indicating that the automatic gain control system is active. The closest prior art, Yamamoto (US 6,831,705 B2) describes a similar method but fails to disclose wherein measuring that at least one signal quality parameter includes determining whether a DC voltage level of an automatic gain control signal (AGC2) has a first value indicating that the automatic gain control system is inactive, or has a value within a predetermined range indicating that the automatic gain control system is active. This distinct feature has been added to claim 6 thus rendering claim 6 allowable.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SIU M. LEE whose telephone number is (571)270-1083. The examiner can normally be reached on Mon-Fri, 7:30-4:00 with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Siu M Lee/
Examiner, Art Unit 2611
10/13/2008

/Chieh M Fan/
Supervisory Patent Examiner, Art Unit 2611